National Healthcare Safety Network (NHSN)

WHAT YOU SHOULD KNOW

Disclosures

I have nothing to disclose

What is NHSN?

Nation's most widely used healthcare-associated infection tracking system

NHSN provides medical facilities, state, regions and the nation with data collection and reporting capabilities needed to:

- Identify infection prevention problems by facility, state, or specific quality improvement project
- Benchmark progress of infection prevention efforts
- Comply with state and federal public reporting mandates
- Ultimately, drive national progress toward elimination of HAIs

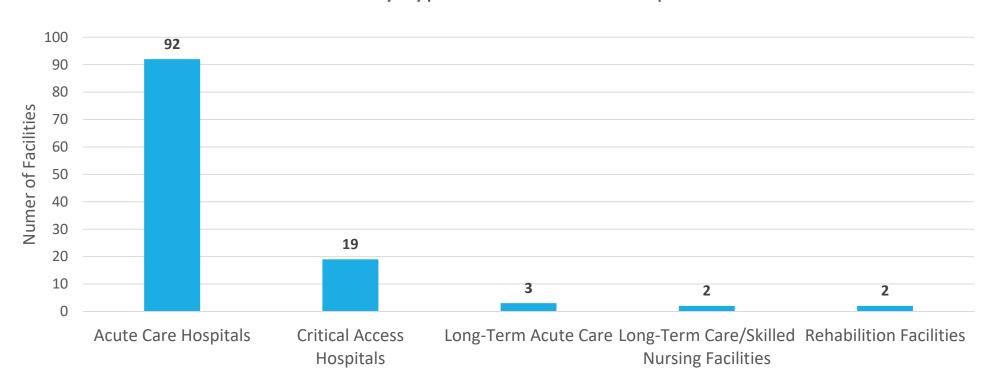
NHSN HAI Types

HAI Types Healthcare Facilities may report into NHSN include:

- Central line associated bloodstream infections (CLABSI)
- Catheter-associated urinary tract infections (CAUTI)
- Surgical Site Infections (SSI)
 - COLO
 - HYST
 - HPRO
 - KPRO
- Hospital-onset Clostridioides difficile (C. difficile/CDI)
- Hospital-onset methicillin-resistant Staphylococcus aureus (MRSA) bacteremia (bloodstream infections)
- Ventilator-associated events (VAE)

Michigan NHSN Group

Facility Types of MI NHSN Group



Reporting Reminders

Always refer to the protocol!

For NHSN reporting, surveillance definitions "trump" clinical judgement

- Clinical diagnoses are important for treatment of individual patients
- Surveillance definitions are important in identifying trends within a population
- Needed to ensure accuracy, completeness and comparability of infection information

Concerns should be sent to nhsn@cdc.gov instead of not reporting or facility adjudication

Update User Information in NHSN

- Be sure to keep FACADMIN and Patient Safety Coordinator contact information up to date in NHSN
- If FACADMIN is not changed prior to turnover, more difficult process
- SHARP Unit uses this information for contact information for facilities in our group
- It is best to have multiple users enrolled in NHSN per facility
 - Ensures there is no lapse on reporting in the event of staff changes

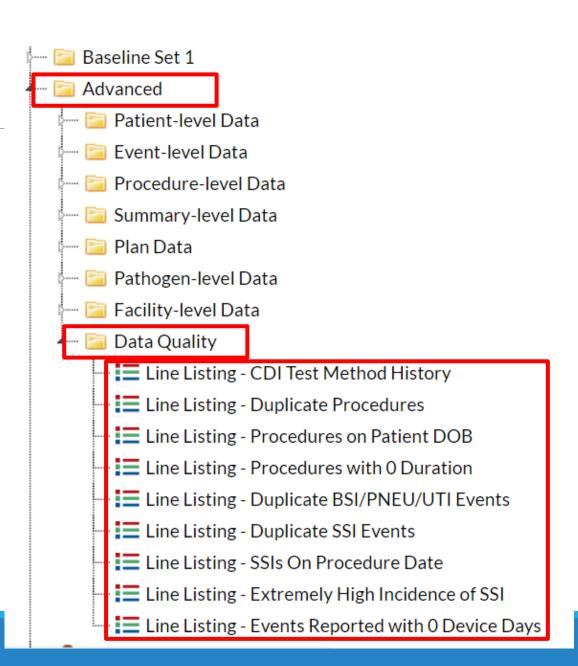
NHSN Analysis

Data Quality

Convenient, pre-built reports available to pinpoint potential errors in data

SHARP runs these reports, in addition to others, prior to every quarter reporting deadline to ensure your facility is reporting the most accurate data

Data errors can affect data analysis and alter models which may prevent accurate representation of your data



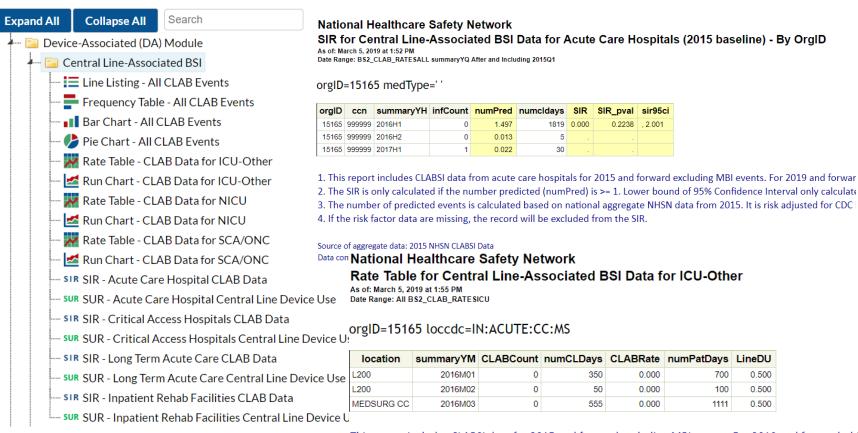
NHSN Analysis Reports

Reports can be beneficial in identifying areas of greatest need of prevention efforts specific to your facility.

Explore these reports! You can't "hurt" the data you've entered

Make modifications to explore the data you want to see

Data quality is important (hint, hint).



This report includes CLABSI data for 2015 and forward excluding MBI events. For 2019 and forward, this report al Data contained in this report were last generated on December 4, 2018 at 10:02 AM.

0.500

0.500

0.500

Analysis Reports – Line List

Line Lists – provides detailed information on all reported infections or events

National Healthcare Safety Network Line Listing for All Catheter-Associated UTI Events

As of: May 8, 2019 at 9:40 AM Date Range: All CAU_EVENTS

orgID	patID	dob	gender	admitDate	eventID	eventDate	eventType	spcEvent	location
15165	132331	12/23/1988	F	03/08/2017	33363883	03/15/2017	UTI	SUTI	2E - MS 2
15165	22920	10/26/1984	F	01/04/2017	33191423	01/06/2017	UTI	SUTI	5 WEST
15165	L006	11/01/1995	F	02/26/2016	21871829	03/01/2016	UTI	SUTI	L800
15165	L007	12/01/1980	М	02/27/2016	21872962	03/02/2016	UTI	SUTI	L100
15165	L008	01/01/1985	F	02/28/2016	21872963	03/03/2016	UTI	SUTI	L100
15165	L009	02/01/2005	F	02/29/2016	21873027	03/03/2016	UTI	SUTI	L100

Data contained in this report were last generated on April 5, 2019 at 9:38 AM.

Beginning January 2015, the CAUTI definition excludes all non-bacterial pathogens and therefore, the number of CAU

Analysis Reports – Charts

Frequency Tables and Bar/Pie Charts – graphical representation of counts infections or events

National Healthcare Safety Network
Frequency Table for All Events
As of: May 8, 2019 at 3:37 PM

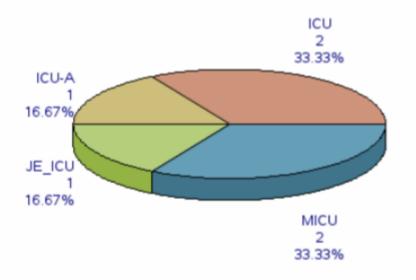
Date Range: EVENTS evntDateYQ 2015Q1 to 2018Q3

Frequency	
Row Pct	

Table of	f evnt[DateYQ I	by eve	ntType	•
		eve	entTyp	e	
evntDateYQ	BSI	LABID	SSI	UTI	Total
2015Q1	0.00	4 100.00	0.00	0.00	4
2016Q1	7 36.84	6 31.58	2 10.53	4 21.05	19
2016Q2	1 50.00	50.00	0.00	0.00	2
2016Q3	0.00	2 100.00	0.00	0.00	2
2016Q4	0.00	1 100.00	0.00	0.00	1
2017Q1	1 16.67	2 33.33	0.00	3 50.00	6
Total	9	16	2	7	34

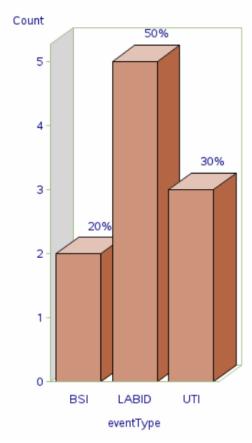
National Healthcare Safety Network

Pie Chart for All Events
As of: May 8, 2019 at 3:33 PM
Date Range: All EVENTS
Stratified by Location
FREQUENCY of eventType



National Healthcare Safety Network

Bar Chart for All Events
As of: May 8, 2019 at 3:29 PM
Date Range: All EVENTS
location=L100



Data contained in this report were last generated on April 5, 2019 at 9:38 AM.

Analysis Reports – Rate Table

Rate table – calculates the rate of infections or events per 1,000 device use or patient days

orgID=10018 loccdc=IN:ACUTE:CC:CT

location sun	nmaryYM	CLABCount	numCLDays	CLABRate	numPatDays
71ICU	2015M01	0	250	0.000	1280

Data contained in this report were last generated on October 18, 2016 at 10:11 AM.

Analysis Reports - SIR

Standardized Infection Ratios (SIR) – compares the actual number of infections to the predicted number of infections

SIR < 1.0 indicates more infections observed than predicted

The primary summary measure used by NHSN to track HAIs

Adjusts for various facility and/or patient-level factors that contribute to HAI risk

Standardized = permits comparisons between the number of infections experienced by a facility, group, or state to the number of infections predicted based on national data

National Healthcare Safety Network

SIR for Central Line-Associated BSI Data for Acute Care Hospitals (2015 baseline) - By OrgID

As of: February 24, 2017 at 12:42 PM

Date Range: BS2_CLAB_RATESALL summaryYQ 2015Q1 to 2015Q4

orgID=10000 CCN=32M22222 medType=M

orgID	summaryYQ	infCount	numPred	numcldays	SIR	SIR_pval	sir95ci
10000	2015Q1	4	1.903	1917	2.102	0.1701	0.668, 5.070
10000	2015Q2	4	2.310	2018	1.731	0.2878	0.550, 4.176
10000	2015Q3	0	0.026	32			
10000	2015Q4	0	0.042	49			

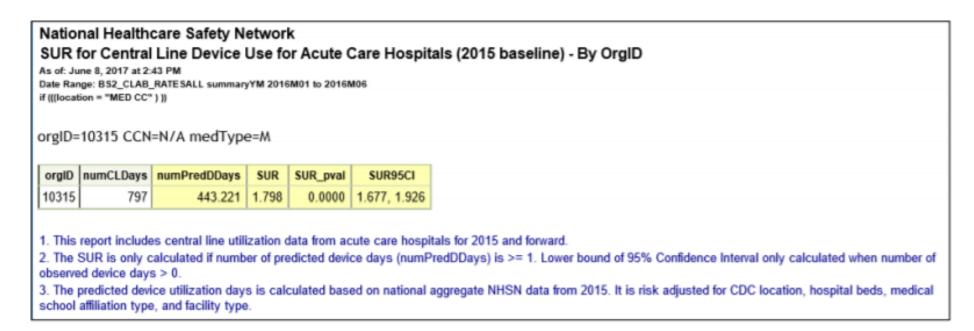
- This report includes non-MBI CLABSI data from acute care hospitals for 2015 and forward
- The SIR is only calculated if the number predicted (numPred) is >= 1. Lower bound of 95% Confidence Interval only calculated when number of observed events
 0
- The number of predicted events is calculated based on national aggregate NHSN data from 2015. It is risk adjusted for CDC location, hospital beds, medical school affiliation type and facility Type.
- 4. If the risk factor data are missing, the record will be excluded from the SIR.

Source of aggregate data: 2015 NHSN CLABSI Data

Data contained in this report were last generated on February 23, 2017 at 12:20 PM.

Analysis Reports - SUR

Standardized Utilization Ratios (SUR) – compares the observed number of device days to the predicted number of device days



TAP Strategy

What is the TAP Strategy?

Targeted Assessment for Prevention (TAP) strategy

- Uses data for action to prevent HAIs
- Targets healthcare facilities and facility units with a disproportionate burden of HAIs
- Assess the gaps in infection prevention using TAP reports
- Implementing infection prevention strategies



TAP Strategy - Target

TAP Reports!

- Purpose: Use NHSN data to provide detailed report identifying facilities/units with excess burden of HAIs using the Cumulative Attributable Difference (CAD) metric
- MDHHS SHARP provides these reports on a quarterly basis to individual facilities in addition to aggregate and regional reports available here: www.michigan.gov/hai

Standardized Infection Ratio (SIR)

Observed # HAIs
SIR = -----Predicted # HAIs

A measure that compares the number of HAIs reported to NHSN to the number of infections that would be predicted based on national baseline data

Cumulative Attributable Difference (CAD)

CAD = Observed # HAIs – (Predicted # HAIs x SIR goal)

A measure that shows difference between the number of observed infections and 'predicted infections multiplied by SIR goal' in a defined period

A little more about CAD...

Facility A: Observed = 50	0, Predicted = 70.805	, SIR = 0.706	
HHS Reduction Goal	SIR Goal	CAD Formula Observed – (Predicted X SIR goal)	CAD
25%	0.75	50 - (70.8 X 0.75)	-3.10
50%	0.50	50 - (70.8 X 0.50)	14.60

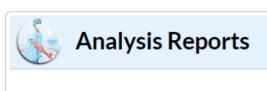
- CAD can be Positive or Negative
 - Positive CAD = additional burden of infections than what would be predicted with regard to the SIR goal ("excess" infections)
 - Negative CAD = fewer infections than what would be predicted

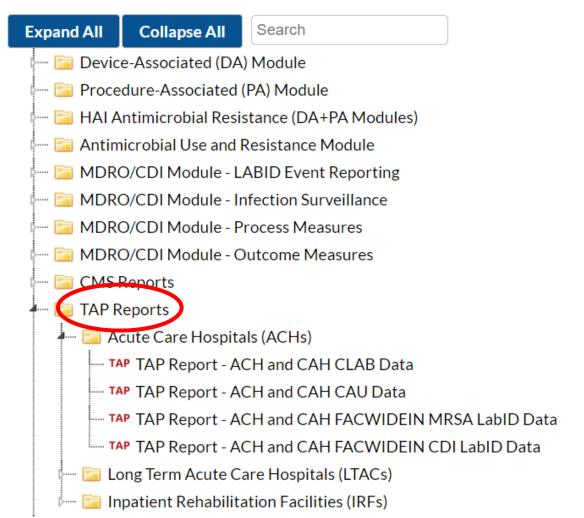
How to Run a TAP Report

TAP reports allow the user to rank every reporting location for each module

- Rank by highest to lowest CAD, regardless of if there are enough predicted infections to calculate an SIR
 - i.e. Location Rank 1 needs the most prevention work
- See top performing and bottom performing locations







National Healthcare Safety Network TAP Report - CLABSI Data for Acute Care Hospitals Locations Ranked by CAD Within a Facility Cumulative Attributable Difference (CAD) Multiplier: HHS Goal = 0.5

As of: April 26, 2016 at 9:52 AM Date Range: All CLAB_TAP

	FACILITY						LOCATION					
orgID	name	facCAD	locRank	location	loccdc	infCount	numcldays	IocDUR	IocCAD	loc SIR	SIRtest	numPathBSI
15165	NHSN State Users Test Facility #2	2.28	1	5M	IN:ACUTE:WARD:M	1	50	14	0.96			3 (1, 0, 1, 0, 0, 1)
			2	5ICU	IN:ACUTE:CC:N	1	140	37	0.90			2 (0, 0, 1, 0, 0, 0)
			3	1	IN:ACUTE:CC:MS	1	200	40	0.79			2 (0, 0, 1, 1, 0, 0)
			4	L600	IN:ACUTE:WARD:M	0	25	17	-0.02			
			4	L700	IN:ACUTE:WARD:MS	0	30	60	-0.02			
			6	L200	IN:ACUTE:CC:MS	0	50	50	-0.05			
			7	L800	IN:ACUTE:WARD:S	0	100	57	-0.07			
			8	L300	IN:ACUTE:CC:S	0	75	33	-0.09			
			9	L100	IN:ACUTE:CC:M	0	100	50	-0.13			

TAP Report Outputs for Group Users

Facilities Within the Group Ranked by CAD

National Healthcare Safety Network

TAP Report for CLABSI Data for Acute Care and Critical Access Hospitals (2015 Baseline)

Facilities within the Group Ranked by CAD

SIR Goal: HHS Goal = 0.5

Facility Rank

A TAP Report is the first step in the CDC TAP Strategy. For the information on the TAP Strategy, please visit: http://www.cdc.gov/ha. As of February 16, 2017 at 2:00 PM

Date Range: BS2_CLAB_TAP summy 172016 to 2016

facRank	Osglib	name	state	medType	numBeds	numLoc	numEvent	
1	10000	DHQP Memorial Hospital	GA		677	27 (8, 0, 19)	157 (77, 0, 80)	112962 (
2	10401	DHQP Memorial Annex	GA	M	886	31 (7, 1, 23)	123 (57, 4, 62)	99541 (3
3	10587	Dudeck Regional Life Center	IL	М	1,044	40 (7, 1, 32)	115 (27, 11, 77)	105785 (
4	90001	CDC Health Hospital	GA		357	20 (4, 1, 15)	61 (22, 4, 35)	22527 (6
5	10018	Weiner Center of Medicine	CA		535	20 (3, 1, 16)	53 (22, 2, 29)	20574 (5
6	10297	Arcement Medical Center	LA		361	19 (3, 0, 16)	55 (20, 0, 35)	25796 (8
7	10064	Falcon Memorial Hospital	GA		457	19 (4, 0, 15)	79 (18, 0, 61)	75493 (2
8	10957	All Saints Medical	LA		281	9 (2, 0, 7)	47 (9, 0, 38)	16691 (5
9	10962	Louisiana Hospital of Texas	TX		595	20 (5, 1, 14)	62 (13, 2, 47)	40057 (14
10	88888	Georgia Hospital of Louisiana	LA	G	355	24 (5, 1, 18)	47 (12, 6, 29)	16936 (7
10	00000	Georgia Hospital of Louisiana	LA	G	333	24 (3, 1, 10)	41 (12, 0, 23)	103

- 1. This report includes CLABSI data for 2015 and forward. Following the 2015 rebaseline, Mucosal Barrier Injury Laboratory-Confirmed Blook
- If location-level CADs are the same in a given facility, their ranks are tied.
 (CNS, YS,SA,ES,KS,EC) = No. of CNS, Yeast (both candida and non-candida species), Staph aureus, Enterococcus species, K. pneumoniae/F
- SIR is set to '.' when predicted number of events is <1.0.
- LOCATION CAD = (OBSERVED_LOCATION PREDICTED_LOCATION* SELECTED SIR Goal)
- SIR TEST = 'SIG' means SIR > SIR Goal significantly Source of aggregate data: 2015 NHSN CLABSI Data
- Data contained in this report were last generated on January 19, 2017 at 12+17 DM

Locations Ranked by CAD Within a Facility

National Healthcare Safety Network
TAP Report for CLABSI Data for Acute Care and Critical Access Hospitals (2015 Baseline)
Locations Ranked by CAD Within a Facility
SIR Goal: HHS Goal = 0.5

Location Rank and Location

A TAP Report is the first step in the CDC TAP Strategy. For more informatin on the TAP Strategy, please visit: http://www.cdc.gov/hai/prevent/tap.html
As of February 16, 2017 at 2:00 PM

Date Range: BS2_CLAB_TAP summaryYr2016 to 2016

		FACILITY				1	L	OCATION					
	Facility Org ID	Facility Name	Facility CAD	Location Rank	Location	CDC Location	Events	Central Line Days	DUR %	CAD	SIR	SIR Test	No. Pathogens (CNS,YS,SA,ES,KS,EC)
1	10000	DHQP Memorial Hospital	6.35		OP WARD	OUT:ACUTE:WARD	0	56					
				1	STEP1	IN:ACUTE:STEP	3	1120	11	2.41	2.6		3 (1, 1, 0, 0, 0, 0)
				2	2W	IN:ACUTE:WARD:M	2	1312	22	1.39	1.6		2 (0, 0, 0, 0, 0, 0)
				3	ICU	IN:ACUTE:CC:MS	4	5073	54	1.33	0.8		4 (0, 2, 0, 2, 0, 0)
				4	STEP2	IN:ACUTE:STEP	2	2105	21	0.89	0.9		2 (0, 1, 1, 0, 0, 0)
				5	1E	IN:ACUTE:WARD:MS	1	402	9	0.81			1 (1, 0, 0, 0, 0, 0)
				6	2E	IN:ACUTE:WARD:PP	0	4	0	0			
				7	1W	IN:ACUTE:WARD:M	0	28	2	-0.01			
				8	TELE	IN:ACUTE:WARD:TEL	0	457	7	-0.21			
				9	ICU2	IN:ACUTE:CC:MS	0	564	10	-0.26			
2	10401	DHQP Memorial Annex	5.35	1	ICU	IN:ACUTE:CC:MS	3	2181	53	2.06	1.6		3 (1, 1, 0, 0, 0, 0)
				2	2 West	IN:ACUTE:WARD:TEL	2	654	6	1.75			2 (0, 0, 1, 0, 0, 1)
				3	6 West	IN:ACUTE:WARD:N	1	382	7	0.85			1 (0, 0, 0, 0, 1, 0)
				4	ICU4	IN:ACUTE:CC:MS	2	2692	60	0.84	0.9		2 (0, 1, 0, 0, 0, 0)
				5	ICU3	IN:ACUTE:CC:M	1	496	6	0.81			1 (0, 1, 0, 0, 0, 0)
				6	7 East	IN:ACUTE:WARD:S	1	1169	14	0.55			1 (0, 0, 0, 0, 1, 0)
				7	5 West	IN:ACUTE:WARD:M	1	2194	21	0.16	0.6		1 (0, 0, 0, 0, 0, 0)

TAP Reports from SHARP

Sample Hospital
Letter ___
2018Q2 TAP Report



SSI HYST

SSI HPRO

SSI KRPO

Acute

Acute

Acute

0.979

1.457

Michigan Department of Health and Human Services
Surveillance for Healthcare-Associated and Resistant Pathogens (SHARP) Unit

The Michigan Department of Health and Human Services (MDHHS) Surveillance for Healthcare-Associated and Resistant Pathogens (SHARP) Unit began including the new targeted assessment for prevention (TAP) reports in the 2014 annual statewide aggregate report. Beginning with the 2015 Quarter 1 report, an aggregate state-wide report and individual TAP reports are provided quarterly to each facility that has voluntarily shared data with the SHARP unit. Aggregate reports are also available for acute care hospitals in each emergency preparedness region and critical access hospitals.

This report shows modules and locations where your facility either needs to focus additional prevention efforts or is excelling in infection prevention. **Table 1** presents a cumulative attributable difference (CAD) determined using the 2020 HHS target standardized infection ratios (SIRs) for each module, using the NHSN 2015 Baselines, which is modeled after the data included in the CDC National and State Annual HAI Report. Numbers with "Need to Prevent" next to them show how many infections your facility needs to prevent quarterly in order to reach the 2020 HHS target SIR. Numbers with "Prevented" next to them show the number of infections prevented beyond what was expected for your facility according to the 2020 HHS target SIR. Corresponding SIRs for each module and location type are provided as well.

Tubic 1. 20	TOQE IUI	Sected Ass	essinent for theve	maon report		
NHSN		Location ²	SIR ³	Significant (Y/N) ⁴	CAD ⁵	Prevented or
Module ¹	Type					Need to Prevent
CAUTI	Acute	All	0.76	N	0.038	Need to Prevent
		ICU	1.076	N	0.909	Need to Prevent
		WARD+	0	N	-0.871	Prevented
CLABSI	Acute	All	1.451	N	2.622	Need to Prevent
		ICU	2.881	N	2.479	Need to Prevent
		WARD+	0.623	N	0.198	Need to Prevent
		NICU			-0.055	Prevented
CDI	Acute	Facility- wide	1.215	N	9.747	Need to Prevent
MRSA	Acute	Facility-	0	N	-1.093	Prevented
Bacteremia		wide				
SSI COLO	Acute		1.012	N	1.85	Need to Prevent

Table 1, 2018O2 Targeted Assessment for Prevention Report

¹CAUTI, catheter-associated urinary tract infection; CLABSI, central line-associated bloodstream infection; CDI, *Clostridium difficile* infection <u>LabID</u>; MRSA Bac, methicillin-resistant *Staphylococcus aureus* bloodstream infection <u>LabID</u>; SSI COLO, admission/readmission colon surgical site infection; SSI HYST, admission/readmission abdominal hysterectomy surgical site infection; SSI HPRO, admission/readmission hip arthroplasty surgical site infection; SSI KPRO, admission/readmission knee arthroplasty surgical site infection.

Ν

0.285

1.039

-0.46

²All includes all units for which in-plan data are reported; ICU includes all critical care units for which in-plan data are reported; WARD+ includes all WARD, WARD_ONC, SCA, STEP, or OTHER units for which in-plan data are reported; NICU includes all neonatal critical care units for which in-plan data are reported; Facility-wide includes all inpatient units for which in-plan data are reported.

³SIR: Standardized Infection Ratio: Ratio of observed events compared to the number of predicted events, accounting for unit type or other variables. An SIR of 1 can be interpreted as having the same number of events as predicted. An SIR that is between 0 and 1 represents fewer events than predicted, while an SIR of greater than 1 represents more events than predicted. SIRs were calculated using the 2015 NHSN Baselines.

⁴Significant (Y/N). A Y indicates that, based on the p-value and 95% Confidence Interval (CI), the SIR is statistically significantly different than 1. An N indicates that, based on the p-value and 95% CI, the SIR is not statistically significantly different than 1 (expected).

⁵CAD=Cumulative Attributable Difference. The number of infections that your hospital either needs to prevent to meet the 2020 HHS target or has prevented beyond the 2020 HHS target. 2020 HHS HAI Target SIRs: CAUTI = 0.75, CLABSI = 0.50, CDI = 0.70, MRSA bacteremia = 0.50, SSI = 0.70.

Need to Prevent

Need to Prevent

Prevented

TAP Strategy - Assess

TAP Facility Assessment Tools

- Assess targeted facilities/units for potential gaps in infection control
- Summarize responses and calculate scores across units, facilities, and groups to identify gaps
- Assessment is meant to capture awareness and perceptions of policies and practices related to HAI prevention
 - Should be administered to a variety of staff and healthcare personnel, including frontline providers, mid-level staff, facility's senior leadership
 - Multiple assessments per facility for interpreting results

TAP CDI Facility Assessment Tool

5 Sections

- I. General Infrastructure
- II. Antibiotic Stewardship
- III. Early Detection and Isolation, Appropriate Testing
- IV. Contact Precautions/Hand Hygiene
- V. Environmental Cleaning

TAP CDI Facility Assessment Tool

CDI TAP Facility Assessment Tool V5.0 - Last Updated April 2018

		Date of Assessment:
Facility Name o	r ID:	
	Other, Please Spec	cify:
Unit Name or II	D:	
Unit Type:		
Title or role of	person completing tool: Other, Please Spec	cify:
Years of experi	ence at facility:(Numeric Response)	
I. General Ir	frastructure, Capacity, and Processes	
1		
	 Does your facility's senior leadership actively promote CDI prevention activities 	s? Yes No Unknown
	2. Is unit-level leadership involved in CDI prevention activities?	Yes No Unknown
	Does your facility have a team/work group focusing on CDI prevention?	Yes No Unknown
	4. Does your facility have a staff person with dedicated time to coordinate CDI prevention activities?	Yes No Unknown
	5. Does your facility have a nurse champion for CDI prevention activities?	Yes No Unknown
	6. Does your facility have a physician champion for CDI prevention activities?	Yes No Unknown
	Comments: (Please specify question number as applicable)	
'		
	Training	
	7. Does your facility provide <i>training</i> on proper hand hygiene for all	
	healthcare personnel:	
	A. Upon hire/during orientation?	Yes No Unknown

TAP CDI Facility Assessment Tool

		Never	Rarely	Sometimes	Often	Always	Unknown	
	Do patients with CDI remain on Contact Precautions for the <u>duration of diarrhea</u> at your facility?							1
	Do patients with CDI remain on Contact Precautions for at least <u>48 hours after diarrhea ends</u> ?							1
	Do patients with CDI remain on Contact Precautions for the <u>entire duration of</u> <u>hospitalization</u> at your facility?							
	Are patients with CDI housed separately from patients without CDI (i.e., in private rooms or placed with other CDI patients ['cohorted']) at your facility?							
	Are dedicated or disposable noncritical medical items (e.g., blood pressure cuffs, stethoscopes, thermometers) used for patients with confirmed or suspected CDI?							1
6.	Are Contact Precautions signs used to designate rooms of patients with <u>confirmed</u> CDI?							1
7.	Are Contact Precautions signs used to designate rooms of patients with <u>suspected</u> CDI?							1
	If Applicable, are the Contact Precautions signs placed in a location easily visible prior o room entry?							
	If Applicable, do the Contact Precautions signs provide clear directions for usage (e.g., about required PPE and handwashing)?							

TAP Strategy - Prevention

TAP Feedback Report

- Summarized data from the Assessment tool
- Identifies specific gaps by section
- Scoring methodology was developed to help further target areas with the most opportunity for improvement
 - NOT intended to compare performance across facilities!

Other prevention resources are outlined on the NHSN TAP webpage

http://www.cdc.gov/hai/prevent/tap.html

Thank you!

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www.michigan.gov/hai